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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/605,546 | 10/07/2003 | Alan E. Stein | ITW7510.074 | 2545 |

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| EXAMINER |
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KERNS, KEVIN P

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| ART UNIT | PAPER NUMBER |
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1725

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07/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/605,546 | Applicant(s) STEIN ET AL. | |
| | Examiner Kevin P. Kerns | Art Unit 1725 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2003 and 16 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-24 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-25, 27-35, 37-40, 44, 45, 48-50, and 54 of copending Application No. 10/708,657 (also see equivalent US 2005/0205542) in view of McCormick (US 6,026,682).

The claims of copending Application No. 10/708,657 disclose at least the following structural features within a welding cooling system: a welding torch configured to present an electrode to a weld; an enclosure (welder housing); a power conditioner (power source/supply) disposed within the enclosure; a cooling system having a coolant tank and a spout disposed within the enclosure to circulate coolant through the welding

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torch/component via coolant hoses (providing supply and return paths for the coolant); a controller operable to control the cooling system and power conditioner; a means to automatically commence coolant circulation through the torch when the electrode is presented to the weld; a heat exchanger and water pump assembly; a coolant pressure sensor; and at least one check valve integrated with the cooling system. Copending Application No. 10/708,657 does not specifically disclose a means to maintain coolant circulation until expiration of a specific time period and/or until a temperature falls below a certain value (i.e. threshold, predetermined value, and/or certain set point after deactivation of the welding machine), in which one or more temperature sensors in cooperation with a dynamic control means would be required.

However, McCormick discloses a coolant safety system for an automated welding apparatus, in which the safety system 10 includes a controller (microprocessor 104 and microprocessor module 157) that is configured to detect connection of a welding component (automated welding gun) to a coolant source (inclusive of coolant supply line 30 and coolant return line 36) via flow rate sensing and control, as well as leak check control from detecting a fault (e.g. leak) and shutting down the flow of liquid coolant via monitoring of the supply and return line sensors, and to permit circulation of coolant through the component upon activation of the welding component (automated welding gun), such that the controller includes pressure sensors 150,152 (column 3, lines 46-67; and Figure 4), pressure flow sensors 100,102 (column 3, lines 1-5 and 34-38; and Figure 4), and a temperature sensor 334 connected to microprocessor 244 (column 9, lines 38-54; and Figure 15) to detect a connection status (including the "shut-

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off" condition if pressure and/or temperature is/are unacceptable or errant) of the welding component to the coolant supply, including termination of welding if predetermined trip (set) points (i.e. indicates if coolant temperature is too high or too low) that are set for the temperature sensor 334 are reached, such that these features are advantageous for automatically shutting down (deactivating) the flow of coolant in the event of a fault (abstract; column 1, lines 11-14 and 57-67; column 2, lines 1-4 and 43-67; column 3, lines 1-10 and 34-67; column 4, lines 13-32 and 41-67; column 5, lines 1-18 and 45-57; column 8, lines 58-67; column 9, lines 1-19 and 38-59; and Figures 1, 4, 15, and 16).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the welding cooling system disclosed in the claims of copending Application No. 10/708,657, by using a means to maintain coolant circulation until expiration of a specific time period and/or until a temperature falls below a certain value (i.e. threshold, predetermined value, and/or certain set point after deactivation of the welding machine), in which one or more temperature sensors in cooperation with a dynamic control means would be required, as taught by McCormick, in order to automatically shut down (deactivate) the flow of coolant in the event of a fault (McCormick; abstract; and column 1, lines 11-14 and 57-63).

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-11 and 18-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-11 and 18-23, the phrase "or the like" (in this instance, the term "type") renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like", or "type"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). The limitations "welding-type system" (claims 1-11), "welding-type component" (claims 1-3, 7, 8, 11, and 18-22), "welding-type apparatus" (claim 23), and "welding-type power" (claim 23) include this indefinite term. For example, what defines a "welding-type component", a "weld-type system" etc.? In addition, why wouldn't a "welding-type power" be any type of output voltage for other high voltage power supplies and transformers, such as for use in power plants?

Importantly, the applicants are additionally referred to the MPEP as follows: MPEP 2173.05(b), under heading E. "Type" (MPEP page 2100-216 of August 2006, Revision 5) states *"The addition of the word "type" to an otherwise definite expression...extends the scope of the expression so as to render it indefinite". Ex parte Copenhagen, 109 USPQ 188 (Bd. App. 1955).*

In this instance, it is suggested to delete all instances of the term "type" to overcome the rejections under 35 USC 112, 2nd paragraph.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prunier (FR 2 536 320 – complete translation provided in a prior Office Action) in view of McCormick (US 6,026,682).

Prunier discloses an arc welding machine that includes a refrigeration unit for torch cooling, in which the welding machine further includes a welding torch configured

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to present an electrode to a weld; an enclosure (welder housing) with a base plate, side plates, end plates, and a top cover; a power conditioner (power source/supply) disposed within the enclosure; a cooling system having a coolant tank and a spout disposed within the enclosure to circulate coolant through the welding torch/component via coolant hoses (providing supply and return paths for the coolant); a controller operable to control the cooling system and power conditioner; a means to automatically commence coolant circulation through the torch when the electrode is presented to the weld; a means to maintain and terminate coolant circulation; a heat exchanger and water pump assembly; and at least one check valve integrated with the cooling system (abstract; translated French text of specification and claims in the paragraph bridging pages 3 and 4, the paragraph bridging pages 6 and 7, the detailed description on pages 7-11, the last two paragraphs on page 11 and bridging to page 12, claims 5 and 6; and Figure). Prunier does not specifically disclose a means to maintain coolant circulation until expiration of a specific time period and/or until a temperature falls below a certain value (i.e. threshold, predetermined value, and/or certain set point after deactivation of the welding machine), in which one or more temperature sensors in cooperation with a dynamic control means would be required.

However, McCormick discloses a coolant safety system for an automated welding apparatus, in which the safety system 10 includes a controller (microprocessor 104 and microprocessor module 157) that is configured to detect connection of a welding component (automated welding gun) to a coolant source (inclusive of coolant supply line 30 and coolant return line 36) via flow rate sensing and control, as well as

leak check control from detecting a fault (e.g. leak) and shutting down the flow of liquid coolant via monitoring of the supply and return line sensors, and to permit circulation of coolant through the component upon activation of the welding component (automated welding gun), such that the controller includes pressure sensors 150,152 (column 3, lines 46-67; and Figure 4), pressure flow sensors 100,102 (column 3, lines 1-5 and 34-38; and Figure 4), and a temperature sensor 334 connected to microprocessor 244 (column 9, lines 38-54; and Figure 15) to detect a connection status (including the "shut-off" condition if pressure and/or temperature is/are unacceptable or errant) of the welding component to the coolant supply, including termination of welding if predetermined trip (set) points (i.e. indicates if coolant temperature is too high or too low) that are set for the temperature sensor 334 are reached, such that these features are advantageous for automatically shutting down (deactivating) the flow of coolant in the event of a fault (abstract; column 1, lines 11-14 and 57-67; column 2, lines 1-4 and 43-67; column 3, lines 1-10 and 34-67; column 4, lines 13-32 and 41-67; column 5, lines 1-18 and 45-57; column 8, lines 58-67; column 9, lines 1-19 and 38-59; and Figures 1, 4, 15, and 16).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the arc welding machine disclosed by Prunier, by using a means to maintain coolant circulation until expiration of a specific time period and/or until a temperature falls below a certain value (i.e. threshold, predetermined value, and/or certain set point after deactivation of the welding machine), in which one or more temperature sensors in cooperation with a dynamic control means would be

required, as taught by McCormick, in order to automatically shut down (deactivate) the flow of coolant in the event of a fault (McCormick; abstract; and column 1, lines 11-14 and 57-63).

8. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Behnke et al. (US 2,510,207) in view of McCormick (US 6,026,682).

Behnke et al. disclose a fluid control system for inert gas blanketed arc welding, in which the welding machine further includes a welding torch T with a cooling jacket J configured to present an electrode E to a workpiece to be welded W; a power conditioner (power source/supply); a cooling system having a coolant tank (manifold) and a spout operable to circulate coolant through the welding torch/component via coolant hoses (providing supply and return paths for the coolant); a controller operable to control the cooling system and power conditioner; a means to automatically commence coolant circulation through the torch when the electrode is presented to the weld; a means to maintain and terminate coolant circulation; a heat exchanger and water pump assembly; and at least one check valve integrated with the cooling system (column 1, line 1 through column 3, line 61; and Figure). Behnke et al. do not specifically disclose a means to maintain coolant circulation until expiration of a specific time period and/or until a temperature falls below a certain value (i.e. threshold, predetermined value, and/or certain set point after deactivation of the welding machine), in which one or more temperature sensors in cooperation with a dynamic control means would be required.

However, McCormick discloses a coolant safety system for an automated welding apparatus, in which the safety system 10 includes a controller (microprocessor 104 and microprocessor module 157) that is configured to detect connection of a welding component (automated welding gun) to a coolant source (inclusive of coolant supply line 30 and coolant return line 36) via flow rate sensing and control, as well as leak check control from detecting a fault (e.g. leak) and shutting down the flow of liquid coolant via monitoring of the supply and return line sensors, and to permit circulation of coolant through the component upon activation of the welding component (automated welding gun), such that the controller includes pressure sensors 150,152 (column 3, lines 46-67; and Figure 4), pressure flow sensors 100,102 (column 3, lines 1-5 and 34-38; and Figure 4), and a temperature sensor 334 connected to microprocessor 244 (column 9, lines 38-54; and Figure 15) to detect a connection status (including the "shut-off" condition if pressure and/or temperature is/are unacceptable or errant) of the welding component to the coolant supply, including termination of welding if predetermined trip (set) points (i.e. indicates if coolant temperature is too high or too low) that are set for the temperature sensor 334 are reached, such that these features are advantageous for automatically shutting down (deactivating) the flow of coolant in the event of a fault (abstract; column 1, lines 11-14 and 57-67; column 2, lines 1-4 and 43-67; column 3, lines 1-10 and 34-67; column 4, lines 13-32 and 41-67; column 5, lines 1-18 and 45-57; column 8, lines 58-67; column 9, lines 1-19 and 38-59; and Figures 1, 4, 15, and 16).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the arc welding machine disclosed by Behnke et al., by using a means to maintain coolant circulation until expiration of a specific time period and/or until a temperature falls below a certain value (i.e. threshold, predetermined value, and/or certain set point after deactivation of the welding machine), in which one or more temperature sensors in cooperation with a dynamic control means would be required, as taught by McCormick, in order to automatically shut down (deactivate) the flow of coolant in the event of a fault (McCormick; abstract; and column 1, lines 11-14 and 57-63).

Response to Arguments

9. The examiner acknowledges the applicants' communication received by the USPTO on April 9, 2007. The provisional double patenting rejections (in view of copending Application No. 10/708,657) are revised to apply a secondary reference (see above section 2). In addition, new 35 USC 112, 2nd paragraph rejections are applied (see above section 4). As stated in section 13 of the most recent Office Action of copending Application No. 10/708,657, the examiner has provided a specific citation in MPEP 2173.05(b) regarding the indefiniteness of the term "type" (see above section 4), so it is suggested to delete all instances of the term "type" throughout the claims. Claims 1-24 remain under consideration in the application.

10. Applicants' arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

With regard to the applicants' remarks/arguments, the arguments addressing the deficiencies of the previously-applied Bailey reference have been found to be persuasive, and thus have overcome the prior 35 USC 103(a) rejections since Bailey does not disclose a cooling system applied to a welding system. However, the newly applied McCormick reference includes a coolant system applied to an automated welding apparatus (see above sections 7 and 8 for details).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5,719,367 (coolant control valve assembly for an automatic welding gun) is also cited in PTO-892.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan Johnson can be reached on (571) 272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns *Kevin Kerns* 7/14/07
Primary Examiner
Art Unit 1725

KPK
kpk
July 14, 2007